

**REMARKS**

Claims 1-42 are currently pending in the subject application and are presently under consideration. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments herein.

**I. Rejection of Claims 1-11 and 14-40 Under 35 U.S.C. § 103(a)**

Claims 1-11 and 14-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Pub. No. 2002/0120921 (Coburn) in view of U.S. Patent No. 5,551,030 (Linden) in further view of US Patent Publication No. 2005/0119871 (Deffler). Reconsideration and allowance of claims 1-7, 13-15 and 17-18 is respectfully requested for at least the following reasons. Neither Coburn, Linden, nor Deffler, individually or in any combination, teach or suggest all the claim limitations of the subject invention.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***. See MPEP § 706.02(j) (emphasis added). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicant's invention relates to a system and methodology that facilitates automatic generation of control code that utilizes function objects within Human-Machine Interfaces (HMI). The claimed subject matter thus enables an operator of an industrial system or process, not necessarily skilled in computer programming but familiar with the industrial system or process, to customize control code necessary for

industrial automation. The system employs artificial intelligence techniques to further simplify the process by interrogating a processing device and/or arranging generated HMI object(s) to represent a system and/or process. The inventive system can also utilize artificial intelligence techniques to generate an arrangement of HMI objects based on user state and context. To this end, independent claim 1 (and similarly, independent claims 17, 35, and 39) recites *a component that utilizes artificial intelligence techniques to generate an arrangement of the HMI objects based upon at least one of user characteristics, user context, or prior arrangements made by a user*. Use of artificial intelligence techniques is disclosed throughout applicant's specification, providing ample support for independent claims 1, 17, 35, and 39. (See e.g. Specification pg. 5, ll. 1-15; pg. 8, ll. 5-20; pg. 9, ll. 18-pg. 10, ll. 1-4; pg. 15, ll. 1-9; pg. 19, ll. 12-26; pg. 20, ll. 27-30; and pg. 21, ll. 22-25.) User characteristics are described as aspects such as security clearance, location, and identity, for example (See e.g. pg. 19, ll. 22-26). Coburn, either alone or in combination with Linden. and/or Deffler, does not disclose or suggest these exemplary features of the claimed subject matter.

Coburn relates generally to system software for managing the design, simulation, implementation, and maintenance of a manufacturing process. Coburn, however, does not disclose using artificial intelligence techniques to generate an arrangement of HMI objects, and certainly does not disclose *generating an arrangement of HMI objects based upon at least one of user characteristics, user context, or prior arrangements made by a user*, as Examiner contends (See Final Office Action dated July 19, 2007). Examiner cites Coburn as disclosing a causal model (See ¶¶ [0689], [0690], and [0704]) which is defined as an expert diagnostic system (See ¶ [0704]). However, there is no mention of user-specific characteristics, user context, or prior arrangements made by a specific user. One advantage of applicant's claimed system is the use of artificial intelligence techniques to tailor the HMI arrangement to a specific user. No two users are alike; each has idiosyncratic methods, experiences, and has likely compiled a unique body of previous work with the claimed system. The claimed artificial intelligence techniques assist with new work by *generating an arrangement of HMI objects based on **user** characteristics, **user** context, and prior arrangements made by a **user***. That is, the arrangement of HMI objects is specific to a user.

In stark contrast, the expert diagnostic system disclosed in Coburn merely assists with diagnosis of the operation of an automated machine. More particularly defined, the causal model of Coburn develops diagnostic rules by observing behavior of the machine and for using the diagnostic rules to detect malfunctions in the behavior of the machine (See ¶ [0704]). There is no mention anywhere in Coburn of using artificial intelligence techniques to generate a user specific HMI arrangement. Examiner cites paragraph [0690] of Coburn, which laconically discloses in an unclear sentence fragment, "Old code modified to work with new interface." The "old code" mentioned does not belong to the current user, or any user for that matter. The document simply does not disclose any user-specificity as applied to generating an HMI arrangement.

Coburn discloses using a causal model *as input* to automatically generate the operator's interface (See ¶ [0690]). Clearly, any artificial intelligence techniques which may be employed by the causal model are not employed to generate the interface; rather, they are used to diagnose. The diagnostic results of the causal model are then used merely as input for the later act of generation, and not at all for generating an arrangement of HMI objects. However, even if a strained reading of Coburn can be judged to disclose using artificial intelligence techniques to generate an HMI arrangement, there is no mention whatsoever of tailoring the HMI arrangement to a specific user. Coburn discloses:

While each of the CAS include predefined controls information, some or all of the CAS may include information which can be "parameterized" or "customized." In this context the term "parameterized" means that a portion of the CA can be modified so that CA features accommodate specific design requirements.

See ¶ [0300]. It is readily apparent that any parameterization adapts the CA to a design problem or requirement, and not to a user. Applicant's system allows a user's particular habits and unique approaches to a problem to be performed automatically, using artificial intelligence techniques, without requiring direct interference. Coburn explicitly requires direct interaction of some kind by stating that parameterization can be performed, ostensibly by the user.

Regarding the term "customization," Coburn does not explicitly define this term

elsewhere in the document. However, by providing a clear definition for the term "parameterization" and by placing the terms "parameterization" and "customization" so close to one another as shown in paragraph [0300] above, the only rational conclusion is that Coburn intended these terms as synonyms. One skilled in the art, reading paragraph [0300] of Coburn would naturally understand that the two terms are synonymous. The idea that "customization" has a distinct definition from "parameterization" is quickly quashed because no definition of the former appears here, or anywhere else in the document. The intent of the author is clear: the terms are synonyms. Therefore, customization in Coburn does not refer to adapting an HMI arrangement to a user, but to a design problem, and therefore Coburn does not disclose or suggest the user-specificity recited in the subject claims.

The same arguments apply equally to independent claims 17, 35, and 39, and associated dependent claims. Therefore, Coburn does not disclose all aspects of the subject claims. Furthermore, Linden and Deffler are similarly deficient with respect to independent claims 1, 17, 35, and 39. Neither document discloses using an artificial intelligence technique to generate an arrangement of HMI objects, much less user-specific arrangements. In view of the foregoing, it is readily apparent that the rejection of independent claims 1, 17, 35, and 39, and associated dependent claims, should be withdrawn.

## **II. Rejection of Claims 12-13 and 41-42 Under 35 U.S.C. §103(a)**

Claims 12-13 and 41-42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Coburn in view of Linden in further view of Deffler and U.S. Patent Pub. No.: 2004/0260518 (Polz). Withdrawal of the rejection is requested for at least the following reason. Claims 12-13 and 41-42 depend from independent claims 1, and 39 respectively, and Polz does not remedy the aforementioned deficiencies with respect to independent claims 1 and 39. Accordingly, this rejection should be withdrawn.

**CONCLUSION**

The present application is believed to be in condition for allowance in view of the above comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ALBRP315US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/Himanshu S. Amin/

Himanshu S. Amin

Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP  
24<sup>TH</sup> Floor, National City Center  
1900 E. 9<sup>TH</sup> Street  
Cleveland, Ohio 44114  
Telephone (216) 696-8730  
Facsimile (216) 696-8731